21. (15). Consider integers from 100 to 999. How many numbers are there
(1) which have three identical digits?
(2) so that each digit is greater than previous?
(3) so that the sum of the digits is equal to 9?

22. (10) Below is an example of a $3 \times 3$ “magic square”. In general, to make a
$n \times n$ magic square, one puts the numbers $1, 2, 3, \ldots n^2$ into an $n \times n$ square
in such a way that the sum of every row and every column is the same; that
sum is called the “magic number”. For the example, the magic number is 15.
\[
\begin{pmatrix}
3 & 7 & 5 \\
8 & 6 & 1 \\
4 & 2 & 9
\end{pmatrix}
\]

Problem: What is the magic number for the magic square with the side 20?

23. (15) In an apartment building the apartments are numbered from 1 to 100.
What is the greatest number of apartments with the same sum of digits?

24. (15) The clock shows 1pm. How long will it be until the long hand and the
short hand are pointing in exactly the same direction?